

Table 9.1 – Price of Fuels Delivered to Electric Generators

(2003 Dollars per Million Btu) ¹

	<u>1980</u>	<u>1992</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Distillate Fuel	NA	NA	NA	NA	NA	NA	5.36	6.01	6.33
Residual Fuel ²	NA	3.08	4.42	3.81	3.40	4.45	4.19	4.71	5.00
Natural Gas ³	NA	2.85	4.55	4.63	3.62	5.37	4.27	5.20	5.44
Steam Coal ⁴	NA	1.73	1.27	1.27	1.28	1.28	1.25	1.25	1.31
Fossil Fuel Average ⁵	NA	1.94	1.83	1.79	1.54	2.19	2.06	2.45	2.46

Sources: EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, D.C., February 2005), Table A3, and EIA, *Electric Power Annual 2003*, DOE/EIA-0348(2003) (Washington, D.C., December 2004), Table 4.5.

Notes:

Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

Data are for steam-electric plants with a generator nameplate capacity of 50 or more megawatts.

Beginning in 2002, data from the Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" for independent power producers and combined heat and power producers are included in this data dissemination. Prior to 2002, these data were not collected; the data for 2001 and previous years include only data collected from electric utilities via the FERC Form 423.

¹ Historical Data converted to 2003\$/MMBtu using EIA Annual Energy Review 2003 Appendix D.

² 1990-2003 data are for distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum), and waste oil.

³ Natural gas, including a small amount of supplemental gaseous fuels that cannot be identified separately.

⁴ Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

⁵ Weighted average price.

Table 9.2 – Electricity Retail Sales

(Billion Kilowatthours)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Retail Sales ¹									
Residential	717	924	1,192	1,203	1,267	1,280	1,471	1,696	1,810
Commercial	488	751	1,055	1,089	1,116	1,119	1,466	1,854	2,088
Industrial	815	946	1,064	964	972	991	1,107	1,229	1,286
Transportation / Other ³	74	92	109	114	107	109	26	32	35
Total	2,094	2,713	3,421	3,370	3,463	3,500	4,070	4,811	5,220

Sources: EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383 (2005), (Washington, D.C., February 2005), Table A8 and EIA, *Annual Energy Review 2003*, DOE/EIA-0384 (2003) (Washington, D.C., September 2004), Table 8.9.

Notes:

¹ Electricity retail sales to ultimate customers by electric utilities and, beginning in 1996, other energy service providers.

² Other includes public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales through 2003. Transportation sector sales reported starting in 2010.

Table 9.3 – Prices of Electricity Sold

(2003 cents per Kilowatthour)¹

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Price by End-Use Sector ²									
Residential	10.6	10.1	8.7	8.9	8.6	8.7	7.8	8.2	8.3
Commercial	10.8	9.5	7.9	8.2	8.0	8.1	6.8	7.5	7.6
Industrial	7.2	6.1	4.9	5.2	5.0	5.0	4.7	5.3	5.4
Transportation / Other ³	9.4	8.3	6.9	7.3	6.8	7.0	6.4	6.8	6.8
End-Use Sector Average	9.2	8.5	7.2	7.6	7.3	7.4	6.6	7.2	7.3
Price by Service Category ²									
Generation	N/A	N/A	N/A	N/A	4.7	4.8	4.1	4.7	4.9
Transmission	N/A	N/A	N/A	N/A	0.6	0.5	0.6	0.7	0.7
Distribution	N/A	N/A	N/A	N/A	2.1	2.1	2.0	1.8	1.8

Sources: EIA, Annual Energy Outlook 2005, DOE/EIA-0383 (2005), (Washington, D.C., February 2005), Table A8 and EIA, Annual Energy Review 2003, DOE/EIA-0384(2003) (Washington, D.C., September 2004), Table 8.10.

Notes:

For 1980, data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous year.

For 1990, data are for a census of electric utilities. For 2000 onward, data also include energy service providers selling to retail customers.

¹ Historical Data real prices expressed in chained (2003) dollars, calculated by using gross domestic product implicit price deflators using EIA Annual Energy Review 2003 Appendix D.

² Prices represent average revenue per kilowatthour.

³ Public street and highway lighting, other sales to public authorities, sales to railroads and railways and interdepartmental sales.

Table 9.4 – Revenue from Electric Utility Retail Sales by Sector

(Millions of 2003 Dollars)

	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Residential	71,750	88,706	98,258	101,263	103,130	105,464	115,251	139,584	149,710
Commercial	49,792	67,592	78,404	84,409	84,388	86,070	99,691	139,850	159,617
Industrial	55,425	54,935	49,381	47,440	45,595	46,396	52,282	64,843	69,121
Transportation/Other ¹	6,562	7,212	7,183	7,815	6,932	7,202	1,682	2,170	2,391
All Sectors ²	182,217	218,361	232,998	240,939	240,299	244,998	268,906	346,448	380,838

Sources: Calculated from EIA, *Annual Energy Outlook 2005*, DOE/EIA-0383 (2005), (Washington, D.C., February 2005), Table A8; EIA, *Annual Energy Review 2003*, DOE/EIA-0384 (2003) (Washington, D.C., September 2004), Tables 8.9 and 8.10.

Notes:

¹ Other includes public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales through 2003. Transportation sector revenue reported starting in 2010.

² For 1980, data are for selected Class A utilities whose electric operating revenues were \$100 million or more during the previous year. For 1990, data are for a census of electric utilities. For 2000 onward, data also include energy service providers selling to retail customers

Table 9.5 – Revenue from Sales to Ultimate Consumers by Sector, Census Division, and State, 2003

(Millions of 2003 Dollars)

Census Division/ State	Residen- tial	Commer- cial	Industrial	Other ¹	All Sectors ²	Census Division/ State	Residen- tial	Commer- cial	Industrial	Other ¹	All Sectors ²
New England	5,382	5,395	2,012	27	12,816	East South Central	7,420	5,111	4,788	0	17,320
Connecticut	1,492	1,292	433	15	3,231	Alabama	2,175	1,399	1,355	0	4,929
Maine	522	409	241	0	1,172	Kentucky	1,435	963	1,365	0	3,763
Massachusetts	2,253	2,684	871	12	5,820	Mississippi	1,343	913	684	0	2,940
New Hampshire	509	445	234	0	1,188	Tennessee	2,467	1,836	1,384	0	5,687
Rhode Island	348	352	116	0	816	West South Central	15,989	10,877	8,326	6	35,198
Vermont	258	212	117	0	588	Arkansas	1,130	585	685	0	2,399
Middle Atlantic	14,424	16,431	5,243	338	36,437	Louisiana	2,241	1,628	1,518	0	5,387
New Jersey	2,921	3,335	976	13	7,245	Oklahoma	1,507	1,083	611	0	3,201
New York	6,743	9,372	1,552	269	17,936	Texas	11,111	7,581	5,512	6	24,211
Pennsylvania	4,760	3,724	2,715	57	11,256	Mountain	6,409	5,700	3,400	4	15,513
East North Central	14,541	12,483	9,839	30	36,894	Arizona	2,316	1,803	587	0	4,706
Illinois	3,616	3,690	2,025	28	9,359	Colorado	1,280	1,298	565	3	3,146
Indiana	2,162	1,374	1,855	1	5,393	Idaho	443	304	360	0	1,107
Michigan	2,813	2,672	1,976	0	7,461	Montana	311	292	179	0	782
Ohio	4,097	3,349	2,766	0	10,213	Nevada	932	718	849	0	2,499
Wisconsin	1,853	1,397	1,217	0	4,468	New Mexico	471	593	290	0	1,354
West North Central	6,958	5,420	3,342	0	15,720	Utah	494	504	290	1	1,290
Iowa	1,094	726	699	0	2,519	Wyoming	161	189	281	0	630
Kansas	971	882	479	0	2,333	Pacific Contiguous	12,949	15,856	6,261	51	35,117
Minnesota	1,579	1,257	955	0	3,791	California	9,686	13,167	4,840	48	27,741
Missouri	2,186	1,618	667	0	4,470	Oregon	1,252	988	554	1	2,795
Nebraska	608	499	352	0	1,458	Washington	2,010	1,701	866	3	4,580

North Dakota	241	214	117	0	572	Pacific					
South Dakota	280	224	73	0	577	Noncontiguous	745	788	556	0	2,088
South Atlantic	25,963	17,711	7,949	74	51,697	Alaska	238	259	87	0	584
Delaware	360	284	233	0	877	Hawaii	507	528	469	0	1,504
District of Columbia	144	627	14	22	808	U.S. Total	110,779	95,772	51,716	531	258,798
Florida	9,636	6,083	1,048	7	16,774						
Georgia	3,711	2,699	1,397	9	7,816						
Maryland	2,060	1,178	1,329	27	4,594						
North Carolina	4,106	2,770	1,453	0	8,329						
South Carolina	2,117	1,316	1,251	0	4,684						
Virginia	3,174	2,365	815	9	6,364						
West Virginia	654	389	408	0	1,450						

Source: EIA, *Electric Sales and Revenue 2003 Spreadsheets*, Data Tables, http://www.eia.doe.gov/cneaf/electricity/esr/esr_tabs.html, Table 1c.

Notes:

¹ Includes sales for public street and highway lighting, to public authorities, railroads and railways, and interdepartmental sales

² Includes bundled and unbundled Consumers

Table 9.6 – Production, Operation, and Maintenance Expenses for Major U.S. Investor-Owned and Publicly Owned Utilities

(Million of Nominal Dollars)

	Investor-Owned Utilities					Publicly Owned Utilities ¹				
	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2002</u>	<u>2003</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2002</u>	<u>2003</u>
Production Expenses										
Cost of Fuel	32,635	29,122	32,555	24,132	26,476	5,276	5,664	7,702	9,348	10,378
Purchased Power	20,341	29,981	61,969	58,828	62,173	10,542	11,988	16,481	24,446	26,078
Other Production Expenses	9,526	9,880	12,828	7,688	7,532	155	212	225	1,647	1,285
Total Production Expenses ²	62,502	68,983	107,352	90,649	96,181	15,973	17,863	24,398	36,188	38,526
Operation and Maintenance Expenses										
Transmission Expenses	1,130	1,425	2,699	3,494	3,585	604	663	845	951	977
Distribution Expenses	2,444	2,561	3,115	3,113	3,185	950	630	854	1,000	1,044
Customer Accounts Expenses	3,247	3,613	4,246	4,165	4,180	375	448	662	700	754
Customer Service and Information Expenses	1,181	1,922	1,839	1,821	1,893	75	120	233	354	311
Sales Expenses	212	348	403	261	234	29	30	82	84	95
Administrative and General Expenses	10,371	13,028	13,009	12,872	13,466	1,619	2,127	2,097	2,594	2,742
Total Electric Operation and Maintenance Expenses	18,585	22,897	25,311	25,726	26,543	3,653	4,018	4,772	5,683	5,923

Source: EIA, *Electric Power Annual 2003*, DOE/EIA-0348(2003) (Washington, D.C., December 2004), Tables 8.1, 8.3 and 8.4; and EIA, *Electric Power Annual 2001*, DOE/EIA-0348(2001) (Washington, D.C., December 2002), Table 8.1; EIA, *Financial Statistics of Major US Publicly Owned Electric Utilities 1994*, DOE/EIA-0437(94)/2 (Washington, D.C., December 1995), Table 8 and Table 17; EIA, *Financial Statistics of Major US Publicly Owned Electric Utilities 1999*, DOE/EIA-0437(99)/2 (Washington, D.C., November 2000), Table 10 & Table 21; EIA, *Financial Statistics of Major US Publicly Owned Electric Utilities 2000*, DOE/EIA-0437(00)/2 (Washington, D.C., November 2001), Table 10 & Table 21.; EIA, Public Electric Utility Database (Form EIA-412) 2002 and 2003.

Notes:

¹ Publicly Owned Utilities include generator and nongenerator electric utilities.

² Totals may not equal sum of components because of independent rounding.

Table 9.6a – Operation and Maintenance Expenses for Major U.S. Investor-Owned Electric Utilities

(Million of Nominal Dollars, unless otherwise indicated)

	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2002</u>	<u>2003</u>
Utility Operating Expenses	142,471	165,321	210,324	188,745	197,459
Electric Utility	127,901	150,599	191,329	171,291	175,473
Operation	81,086	91,881	132,662	116,374	122,723
Production	62,501	68,983	107,352	90,649	96,181
Cost of Fuel	32,635	29,122	32,555	24,132	26,476
Purchased Power	20,341	29,981	61,969	58,828	62,173
Other	9,526	9,880	12,828	7,688	7,532
Transmission	1,130	1,425	2,699	3,494	3,585
Distribution	2,444	2,561	3,115	3,113	3,185
Customer Accounts	3,247	3,613	4,246	4,165	4,180
Customer Service	1,181	1,922	1,839	1,821	1,893
Sales	212	348	403	261	234
Administrative and General	10,371	13,028	13,009	12,872	13,466
Maintenance	11,779	11,767	12,185	10,843	11,141
Depreciation	14,889	19,885	22,761	17,319	16,962
Taxes and Other	20,146	27,065	23,721	26,755	24,648
Other Utility	14,571	14,722	18,995	17,454	21,986
Operation (Mills per Kilowatthour)¹					
Nuclear	10.04	9.43	8.41	8.54	8.86
Fossil Steam	2.21	2.38	2.31	2.54	2.50
Hydroelectric & Pumped Storage	3.35	3.69	4.74	5.07	4.50
Gas Turbine and Small Scale ²	8.76	3.57	4.57	2.72	2.76
Maintenance (Mills per Kilowatthour)¹					
Nuclear	5.68	5.21	4.93	5.04	5.23
Fossil Steam	2.97	2.65	2.45	2.68	2.73
Hydroelectric & Pumped Storage	2.58	2.19	2.99	3.58	3.01
Gas Turbine and Small Scale ²	12.23	4.28	3.50	2.38	2.26

Source: EIA, *Electric Power Annual 2003*, DOE/EIA-0348(2003) (Washington, D.C., December 2004), Tables 8.1 and 8.2, and EIA, *Electric Power Annual 2001*, Tables 8.1 and 8.2.

Notes:

¹ Operation and maintenance expenses are averages, weighed by net generation.

² Includes gas turbine, internal combustion, photovoltaic, and wind plants.

Table 9.6b – Operation and Maintenance Expenses for Major U.S. Publicly Owned Generator and Nongenerator Electric Utilities

(Million of Nominal Dollars, except employees)

	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2002</u>	<u>2003</u>
Production Expenses					
Steam Power Generation	3,742	3,895	5,420	6,558	7,539
Nuclear Power Generation	1,133	1,277	1,347	1,646	1,739
Hydraulic Power Generation	205	261	332	746	785
Other Power Generation	196	231	603	1,144	1,100
Purchased Power	10,542	11,988	16,481	24,446	26,078
Other Production Expenses	155	212	225	1,647	1,285
Total Production Expenses ¹	15,973	17,863	24,398	36,188	38,526
Operation and Maintenance Expenses					
Transmission Expenses	604	663	845	951	977
Distribution Expenses	950	630	854	1,000	1,044
Customer Accounts Expenses	375	448	662	700	754
Customer Service and Information Expenses	75	120	233	354	311
Sales Expenses	29	30	82	84	95
Administrative and General Expenses	1,619	2,127	2,097	2,594	2,742
Total Electric Operation and Maintenance Expenses	3,653	4,018	4,772	5,683	5,923
Total Production and Operation and Maintenance Expenses	19,626	22,651	30,100	44,813	47,165
Fuel Expenses in Operation					
Steam Power Generation	2,395	2,163	4,150	4,818	5,624
Nuclear Power Generation	242	222	316	433	398
Other Power Generation	113	101	373	754	771
Total Electric Department Employees ²	N/A	73,172	71,353	93,520	92,752

Source: EIA, *Financial Statistics of Major US Publicly Owned Electric Utilities* 1994, DOE/EIA-0437(94)/2 (Washington, D.C., December 1995), Table 8 and Table 17; EIA, *Financial Statistics of Major U.S. Publicly Owned Electric Utilities* 1999, DOE/EIA-0437(99)/2 (Washington, D.C., November 2000), Table 10 & Table 21; EIA, *Financial Statistics of Major US Publicly Owned Electric Utilities* 2000, DOE/EIA-0437(00)/2 (Washington, D.C., November 2001), Table 10 & Table 21; EIA, Public Electric Utility Database (Form EIA-412) 2002 and 2003; EIA, *Electric Power Annual* 2003, DOE/EIA-0348(2003) (Washington, D.C., December 2004), Tables 8.3 and 8.4

Notes:

¹ Totals may not equal sum of components because of independent rounding.

² Number of employees were not submitted by some publicly owned electric utilities because the number of electric utility employees could not be separated from the other municipal employees or the electric utility outsourced much of the work.

Table 9.7 – Environmental Compliance Equipment Costs

(Nominal Dollars)

	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2010</u>	<u>2020</u>	<u>2025</u>
Average Flue Gas Desulfurization Costs at Utilities									
Average Operation & Maintenance Costs (mills/kWh)	1.35	1.16	0.96	1.27	1.11	1.23	N/A	N/A	N/A
Average Installed Costs (\$/kW)	118	126	124	131	124	124	N/A	N/A	N/A

Source: EIA, *Electric Power Annual 2001*, DOE/EIA-0348 (01) (March 2003), Table 5.3, *Electric Power Annual 2003*, Table 5.3.

Notes:

Includes plants under the Clean Air Act that were monitored by the Environmental Protection Agency even if sold to an unregulated entity.

These data are for plants with a fossil-fueled steam-electric capacity of 100 megawatts or more.